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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,348	11/12/2003	Dimitri P. Zafiroglu	RD8120USDIV	6822

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EXAMINER	
GOFF II, JOHN L	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 11/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/706,348	ZAFIROGLU, DIMITRI P.	
	Examiner	Art Unit	
	John L. Goff	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13 and 16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 December 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/12/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by the admitted prior art (Specification pages1-2 and WO 00/52446).

The admitted prior art discloses a process for bonding an array of pile loops stitched onto a surface of a backing to form a carpet, each pile loop having a root portion that is held to the surface of the backing by a stitching thread. The admitted prior art teaches the process comprises applying a thermoplastic binder to the surface of the backing without pile loops thereon, stitching the array of pile loops onto the surface of the backing with a stitching thread, and then heating the backing with the binder and array of pile loops thereon by passing over heated mechanical flexing rolls (101P, 103A, 103B of Figure 5) to melt the binder and cause it to flow and concentrate in the root portion of the pile loops, in the stitching thread underlaps holding the root portion to the backing, and near the surface of the backing adjacent the root portions by mechanically flexing the backing into and out of the plane of the backing (Specification page 1, lines 13-22 and Figures 5, 6E, and 6F and Page 20, lines 15-26 and Page 36, lines 8-15 and Page 38, lines 10-12 and 37-38 and Page 39, lines 1-2 of WO 00/52446). The

admitted prior art further teaches it is conventional after stitching for the carpet to undergo further finishing processes including scouring (Specification page 2, lines 28-32).

Claim Rejections - 35 USC § 103

3. Claims 3-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art as applied to claims 1 and 2 above, and further in view of Gerlach et al. (U.S. Patent 4,361,609).

The admitted prior art as applied above teaches all of the limitations in claims 3-9 except for a teaching of applying heat to the mechanical flexing rolls and backing by immersing the mechanical flexing rolls and backing in a liquid or passing steam over the backing and mechanical flexing rolls, it being noted the admitted prior art is not limited to any particular technique of applying heat. It would have been obvious to one of ordinary skill in the art at the time the invention was made to heat the mechanical flexing rolls and backing taught by the admitted prior art using any well known and conventional technique such as by immersing the mechanical flexing rolls and backing in a liquid, passing steam over the backing and mechanical flexing rolls, passing the backing over internally heated mechanical flexing rolls, etc. as all of these techniques were well known, functionally equivalent alternatives in the art for heating a carpet backing with a binder thereon as shown for example by Gerlach et al. wherein only the expected results would be achieved.

Regarding claims 4, 5, 7, and 8, it would have been obvious to one of ordinary skill in the art at the time the invention was made to dry the backing after immersion in liquid or steam to remove any excess liquid as drying after immersion in a liquid, e.g. dyeing, was a conventional

technique in the art as noted by the admitted prior art with it being further noted it would have been obvious to experimentally determine/optimize the drying conditions as a function of the amount of drying required, melting points of the individual components, etc. as doing so would have required nothing more than ordinary skill and routine experimentation.

Gerlach et al. disclose a carpet backing having binder fibers thereon wherein the fibers are bonded to the backing and each other by conventional heating techniques such as hot water, saturated steam, hot air, hot rollers, etc. (Column 3, lines 5-14 and Column 9, lines 41-48).

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art optionally in view of Gregg.

The admitted prior art is described above in full detail. Scouring is a conventional technique as noted by the admitted prior art, and scouring is performed for removing oil and finish from the pile loops after stitching to increase the soil resistance of the carpet as shown for example optionally by the background of Gregg. It would have been obvious to one of ordinary skill in the art at the time the invention was made to perform the scouring taught by the admitted prior art after stitching and before mechanical flexing to increase the soil resistance of the carpet as only the expected results would be achieved. Gregg is described above in full detail.

5. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art and Gerlach et al. as applied to claims 3-9 above, and further optionally in view of Gregg.

Claims 11 and 12 are rejected in the same manner as that applied in paragraph 4 above.

6. Claims 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art as applied to claims 1 and 2 above, and further in view of Hackler (U.S. Patent 4,871,604) and the background of Kajikawa et al. (U.S. Patent 5,843,087).

The admitted prior art as applied above teach all of the limitations in claims 13 and 16 except for a specific teaching of using a binder in powder form having a particles size of 1 to 500 microns, it being noted the admitted prior art is not limited to any particular thermoplastic binder although thermoplastic dispersions are noted. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the thermoplastic binder taught by the admitted prior art any well known and conventional carpet binder such as the high strength thermoplastic powder dispersion (particle size of 25-100 microns and melting point of about 100 °C) shown for example by Hackler.

Regarding the melting point limitation, the admitted prior art teaches using a binder having a melting point above 80 °C and 25 °C below the melting point of the material of the loops, it being noted nylon loops a loop material disclosed by the admitted prior art melt at 120 °C, such that the limitation is met (Specification page 1, lines 19-32 and Page 36, lines 8-15 of WO 00/52246). In any event, it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine/optimize the melting point of the binder as a function of the loop/backing bond strength as doing so would have required nothing more than ordinary skill and routine experimentation.

Regarding the limitation requiring an amorphous binder, the admitted prior art teaches using low-melting thermoplastics such as polyolefin, polyester copolymer, polyamide copolymer, etc. as the binder which appear amorphous. In any event, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to use as the thermoplastic binder taught by the admitted prior art one that is amorphous as it was well known in the art to use an amorphous thermoplastic binder such that in the event the binder combusts during use of the carpet the amount of fumes generated is relatively small as shown for example by the background of Kajikawa et al.

Hackler is directed to a thermoplastic adhesive binder powder used to strengthen carpet fiber bond points wherein the binder powder has a particles size of 25-100 microns, a melting point of about 100 °C, and may be applied as a dispersion (liquid coating) (Column 2, lines 20-24 and Column 3, lines 21-24 and 36-40). The background of Kajikawa et al. disclose it is conventional in carpet manufacturing to use an amorphous binder (e.g. amorphous polyolefin) such that in the event the binder combusts during use of the carpet the amount of fumes generated is relatively small (Column 1, lines 45-53).

7. Claims 1, 2, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Reinhardt (U.S. Patent 2,261,096) and optionally Gregg (U.S. Patent 3,864,079).

The admitted prior art is described in full detail above. The admitted prior art discloses a finishing device (101 of Figure 5) including heated mechanical rolls (101P, 103A, 103B of Figure 5) wherein the backing with binder and array of pile loops travels into out of the plane of the backing (by rolls 103A and 103B of Figure 5) such that the mechanical flexing limitation as required by the claims appears to be met. In any event, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the admitted prior art to incorporate staggered heated mechanical flexing rolls as the heated mechanical rolls as this was a

well known technique in the art to ensure complete penetration of the binder as shown for example by Reinhardt.

Regarding claim 10, scouring is a conventional technique as noted by the admitted prior art, and scouring is performed for removing oil and finish from the pile loops after tufting/stitching to increase the soil resistance of the carpet as shown for example optionally by the background of Gregg. It would have been obvious to one of ordinary skill in the art at the time the invention was made to perform the scouring taught by the admitted prior art as modified by Reinhardt after stitching and before mechanical flexing to increase the soil resistance of the carpet as only the expected results would be achieved.

Reinhardt is directed to a method of applying an adhesive binder to a needled fiber backing wherein after applying the binder to the backing the backing undergoes mechanical flexing by passing over staggered, heated mechanical flexing rolls to ensure complete penetration of the adhesive into the backing and the needled fibers (Figure 1 and Column 1, lines 23-30 and Column 2, lines 28-33). The background of Gregg discloses it is conventional in the art to scour carpet after tufting to remove oil and finish from the yarn of the carpet thereby increasing the soil resistance of the carpet (Column 1, lines 9-24).

8. Claims 3-9, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art, Reinhardt, and optionally Gregg as applied to claims 1, 2, and 10 above, and further in view of Gerlach et al.

Claims 3-9, 11, and 12 are rejected in the same manner as that applied in paragraph 3 above.

9. Claims 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art, Reinhardt, and optionally Gregg as applied to claims 1, 2, and 10 above, and further in view of Hackler and the background of Kajikawa et al.

Claims 13 and 16 are rejected in the same manner as that applied in paragraph 6 above.

10. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callahan (U.S. Patent 3,554,824) in view of MacIsaac et al. (U.S. Patent 3,722,442).

Callahan discloses a process for bonding an array of pile loops stitched onto a surface of a backing to form a carpet, each pile loop having a root portion. Callahan teaches the process comprises applying a thermoplastic binder dispersed in a liquid vehicle to the surface of the backing without pile loops thereon, tufting the array of pile loops onto the surface of the backing, and then heating the backing with the binder and array of pile loops thereon to melt the binder and causing it to flow and concentrate in the root portion of the pile loops and near the surface of the backing adjacent the root portions by mechanically flexing the backing into and out of the plane of the backing (Figures 1 and Column 2, lines 21-28 and 51-72 and Column 3, lines 1-61). Callahan does not specifically teach stitching/tufting the array of pile loops onto the backing with a stitching thread. It would have been obvious to one of ordinary skill in the art at the time the invention was made to secure the array of pile loops taught by Callahan in any well known and conventional manner such as by stitching with a stitching thread as shown for example by MacIsaac et al. as only the expected results would be achieved.

MacIsaac et al. are exemplary of the well known technique of securing an array of pile loops to a backing using a stitching thread (the Figures and Column 1, lines 3-7 and Column 3, lines 2-9).

11. Claims 3-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callahan and MacIsaac et al. as applied to claims 1 and 2 above, and further in view of Gerlach et al.

Claims 3-9 are rejected in the same manner as that applied in paragraph 3 above.

12. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Callahan and MacIsaac et al. as applied to claims 1 and 2 above, and further in view of Gregg.

Claim 10 is rejected in the same manner as that applied in paragraph 4 above.

13. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Callahan and MacIsaac et al. as applied to claims 3-9 above and further, in view of Gregg.

Claims 11 and 12 are rejected in the same manner as that applied in paragraph 4 above.

14. Claims 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callahan and MacIsaac et al. as applied to claims 1 and 2 above, and further in view of Hackler and the background of Kajikawa et al.

Claims 13 and 16 are rejected in the same manner as that applied in paragraph 6 above.

Response to Arguments

15. Regarding applicants preliminary arguments, it is noted Reinhardt is applied only as exemplary of the conventional technique of mechanically flexing a carpet backing with binder thereon, and Hackler is applied only as exemplary of the well known use of thermoplastic binder materials having the claimed particle size.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571) 272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John L. Goff

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